

10/540766

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
15 July 2004 (15.07.2004)

PCT

(10) International Publication Number  
WO 2004/058056 A1

(51) International Patent Classification<sup>7</sup>: A61B 3/11  
(21) International Application Number:  
PCT/GB2003/005653

(74) Agent: ELSWORTH, Dominic, Stephen; Hargreaves  
Elsworth, Rotterdam House, 116 Quayside, Newcas-  
tle-upon-Tyne NE1 3DY (GB).

(22) International Filing Date:  
23 December 2003 (23.12.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
0230223.0 24 December 2002 (24.12.2002) GB

(71) Applicant (for all designated States except US): NEW-  
CASTLE-UPON-TYNE HOSPITALS NHS TRUST  
[GB/GB]; Freeman Hospital, High Heaton, Newcas-  
tle-upon-Tyne NE7 7DN (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): CLARK, Andrew  
[GB/GB]; 27 Byron Avenue, Boldon Colliery, Tyne & Wear  
NE35 9DT (GB). CHAMBERS, Iain, R. [GB/GB]; 20  
Ripley Drive, Cramlington, Northumberland NE23 7XA  
(GB).

(81) Designated States (national): AE, AG, AL, AM, AT, AU,  
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,  
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,  
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,  
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,  
MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC,  
SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA,  
UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

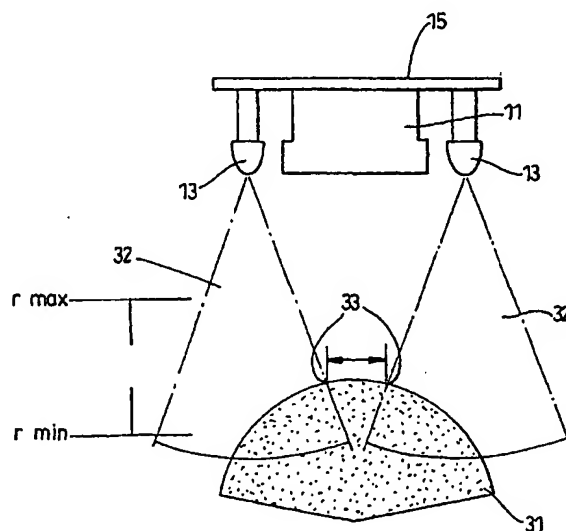
(84) Designated States (regional): ARIPO patent (BW, GH,  
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),  
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,  
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE,  
SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA,  
GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

[Continued on next page]

(54) Title: A PUPILOMETER



(57) Abstract: A pupilometer comprises image capturing means, illumination means comprising two spaced apart light sources, stimulation means, and image processing software, the illumination means generating and emitting light of a first wave-length, and the stimulation means generating and emitting light of a second wavelength. The illumination means is arranged to one or both sides of said image capturing means and, in use, shines light towards the eyeball, the image processing software receiving data from the image capturing means, and by processing said data according to an algorithm establishes the distance between the surface of the eyeball and the camera.

WO 2004/058056 A1